



Operating Instruction Manual

**Generic DTM for DeviceNet Slave Devices**

**Configuration of DeviceNet Slave Devices**

Language: English

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# 1 Introduction

## 1.1 About this Manual

This manual describes how to configure DeviceNet Slave devices, which are described with EDS files. These devices can be configured by use of the Generic DeviceNet Slave DTM within a FDT Framework.

### Dialog Panes

The table below gives an overview for the individual dialog panes descriptions:

Section	Subsection	Manual Page
Configuration	<i>General Settings</i>	20
	<i>Connection Configuration</i>	21
	<i>Parameter</i>	29
Device Description	<i>Device Info</i>	31
	<i>EDS Viewer</i>	31

Table 1: Descriptions Dialog Panes

### 1.1.1 Online Help

The Generic DeviceNet Slave DTM contains an integrated online help facility.

- To open the online help, click on the **Help** button or press the **F1** key.

## 1.1.2 List of Revisions

Index	Date	Version	Component	Chapter	Revisions
1	20/12/04	1.000	-	Alle	created
2	03/02/05	1.001	DevNetGenSlaveDTM.dll	Alle	revised
3	13/02/06	1.0.0.9	DevNetGenSlaveDTM.dll	1 bis 4	actualized
4	09.05.07	1.0.2.1, 1.0.1.2	DevNetGenSlaveDTM.dll DeviceNetGenericSlaveDtm Gui.ocx	1 2.1 3.1 4.1 4.2 4.3	Chapter 'Introduction' actualized, Section 'Overview Configuration' actualized, Section 'Overview Device Description' actualized, Section 'User Rights' actualized, Section 'Contact' added Section 'References' added
5	07.01.09	1.0.4.0, 1.0.3.0	DevNetGenSlaveDTM.dll DeviceNetGenericSlaveDtm Gui.ocx	Alle 1 2 7.2	Manufacturer and product names generalized (completed), Chapter 'Introduction' revised, Chapter 'Getting started' added Section 'User Rights' revised,

### 1.1.3 Conventions in this Manual

Operation instructions, a result of an operation step or notes are marked as follows:

**Operation Instructions:**

➤ <instruction>

Or

1. <instruction>
2. <instruction>

**Results:**

☞ <result>

**Notes:**



**Note:** <note>

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<note were to find further information>

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## 1.3 About Generic DeviceNet Slave DTM

You can use the Generic DeviceNet Slave DTM to configure DeviceNet Slave devices described with EDS files within a FDT Framework.

### 1.3.1 Requirements

#### System Requirements

- Windows® 2000/ Windows® XP
- CD ROM drive
- Graphic resolution: min. 1024 x 768 pixel
- Keyboard and Mouse

#### Requirements Generic DeviceNet Slave DTM

Requirements for working with a Generic DeviceNet Slave DTM are:

- Installed FDT/DTM V 1.2 compliant frame application
- Installed DeviceNet Master DTM
- EDS files of the devices to be configured
- The DTM must be loaded to the device catalog.

#### Loading EDS files

To work with the Generic DeviceNet Slave DTM, the EDS file of the device must be present in the EDS folder in the installation directory of the DTM.

## 1.4 Dialog Structure of the Generic DeviceNet Slave DTM

The graphical user interface of the DTM is composed of different areas and elements listed hereafter:

1. A header area containing the **General Device Information**,
2. The **Navigation Area** (area on the left side),
3. The **Dialog Pane** (main area on the right side),
4. The general buttons **OK, Cancel, Apply, Help**,
5. The **Status Line** containing information e. g. the online-state of the DTM.

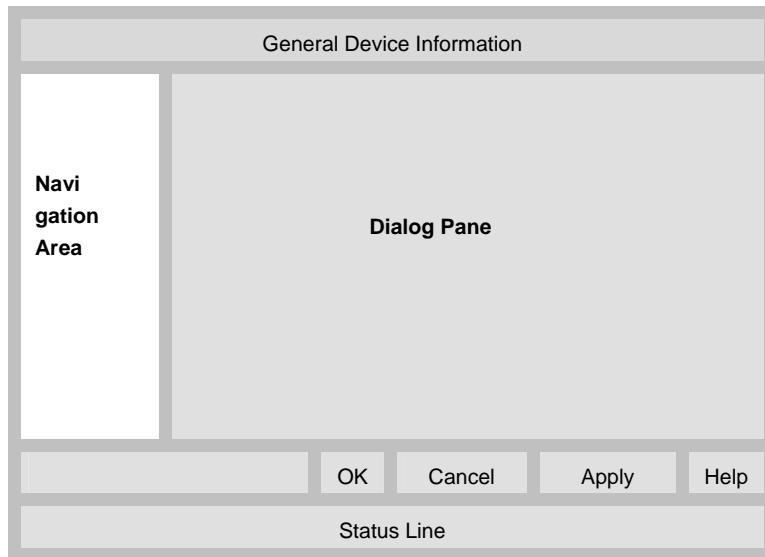


Figure 1: Dialog Structure of Generic DeviceNet Slave DTM

## 1.4.1 General Device Information

Parameter	Meaning
IO Device	Name of the device
Vendor	Vendor name of the device
Device ID	Identification number of the device
Vendor ID	Identification number of the vendor

Table 2: General Device Information

## 1.4.2 Navigation Area

The **Navigation Area** at the left side of the dialog provides a tree structure to navigate through the panes of the DTM.

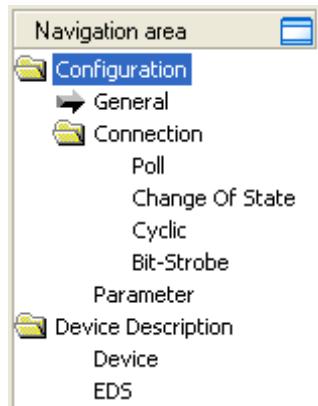


Figure 2: Navigation Area

- To access a DTM pane select the respective item of the navigation tree structure.

The **Navigation Area** can be hidden or it can be displayed again.

Control	Meaning
	Window button to hide the navigation area, (at the right side of the navigation title bar).
	<b>Show navigation area</b> button to open the navigation area, (at the lower left corner of the dialog pane).

Table 3: Hide / display Navigation

### 1.4.3 Dialog Panes

At the dialog pane the **Settings** or **Device Description** panes are opened via the corresponding folder in the navigation area.

Configuration	
General	On the page <b>General Settings</b> the MAC-ID can be read and the parameters 'UCMM', 'Fragmentation Timeout' or 'Verify Device ID' can be preset. Further information to this you find in section <i>General Settings</i> on page 20.
...Connection	On the page <b>Connection Configuration</b> a connection type can be selected and configured. Further information to this you find in section <i>Connection Configuration</i> on page 21.
Parameters	In the <b>Parameter</b> dialog the parameter data of the device can be edited. A detailed description you find in section <i>Parameter</i> on page 29.
Device Description	
Device	The <b>Device Info</b> pane contains the manufacturer information about the device. For further information see section <i>Device Info</i> on page 31.
EDS	By use of the <b>EDS-Viewer</b> an EDS file can be viewed and searched through. For further information see section <i>EDS Viewer</i> on page 31.

Table 4: Overview Dialog Panes

## 1.4.4 Controls and Dialog Buttons

In this section, you will find general information on controls and buttons.

### 1.4.4.1 General Buttons

The table below explains the general buttons in the DTM user interface.

Button	Meaning
<b>OK</b>	To confirm your latest settings, click on the <b>OK</b> button. All changed values will be applied on the frame application database. <i>The dialog then closes.</i>
<b>Cancel</b>	To cancel your latest changes, click on the <b>Cancel</b> button. Answer to the safety query <b>Configuration data has been changed. Do you want to save the data?</b> by <b>Yes</b> , <b>No</b> or <b>Cancel</b> . <b>Yes</b> : The changes are saved or the changed values are applied on the frame application database. <i>The dialog then closes.</i> <b>No</b> : The changes are <u>not</u> saved or the changed values are not applied on the frame application database. <i>The dialog then closes.</i> <b>Cancel</b> : Back to the DTM.
<b>Apply</b>	To confirm your latest settings, click on the <b>Apply</b> button. All changed values will be applied on the frame application database. <i>The dialog remains opened.</i>
<b>Help</b>	To open the DTM online help, click on the <b>Help</b> button.

Table 5: General Buttons

### 1.4.4.2 Table Line Buttons

- To select, create or delete a line in a table use the buttons shown in the table below.

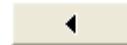
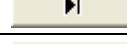
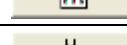
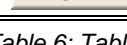
Button	Meaning
	To select the first line of a table use the button <b>First Line</b> .
	To select the previous line of a table use the button <b>Previous Line</b> .
	To select the next line of a table use the button <b>Next Line</b> .
	To select the last line of a table use the button <b>Last Line</b> .
	The button <b>Create a new Line</b> inserts new lines into the table.
	The button <b>Delete selected Line</b> deletes the selected line from the table.

Table 6: Table Line – Buttons

## 1.4.5 Status Bar

The **Status Bar** displays information about the current state of the DTM. The current activity e.g. download is signaled graphically via icons in the status bar.

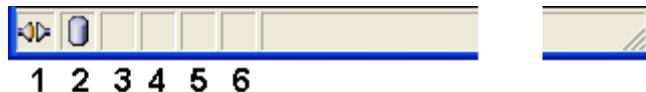


Figure 3: Status Bar – Status Fields 1 to 6

Status Field	Icon / Meaning
1	<b>DTM Connection States</b> <ul style="list-style-type: none"> <li> <b>Connecting:</b> Icon going closed = Device is going online</li> <li> <b>Connected:</b> Icon closed = Device is online</li> <li> <b>Disconnecting:</b> Icon going opened = Device is going offline</li> <li> <b>Disconnected:</b> Icon opened = Device is offline</li> <li> <b>Disconnected – disturbed:</b> Icon with lightening = Device communication disturbed</li> </ul>
2	<b>Data Source States</b> <ul style="list-style-type: none"> <li> <b>Data set:</b> The displayed data are read out from the instance data set (database).</li> <li> <b>Data set locked:</b> The displayed data are read out from the instance data set (database). Database is locked with password.</li> <li> <b>Device:</b> The displayed data are read out from the device.</li> <li> <b>Device locked:</b> The displayed data are read out from the device. Device is locked with password.</li> </ul>
3	<b>States of the instance Date Set</b> <ul style="list-style-type: none"> <li>- <b>All data loaded</b></li> <li> <b>Valid Modified:</b> Parameter is changed (not equal to data source).</li> <li> <b>Invalid Modified:</b> Invalid value (e. g. not plausible).</li> <li>- <b>Initial data set:</b> Parameter value is equal to data source value (data base or field device).</li> </ul>
4	<b>Changes directly made on the Device</b> <ul style="list-style-type: none"> <li> Changes have only an impact on the device and not on the instance data set. Instance data set and the device may not be consistent any more.</li> <li> Load/configure diagnosis parameters: Diagnosis is activated.</li> </ul>
5	<b>Direct Mode active</b> <ul style="list-style-type: none"> <li> Direct Mode active</li> </ul>

More see next page

Status Field	Icon / Meaning
6	<p><b>Device Diagnosis Status</b></p> <p> <b>Device Failure:</b> Incorrect communication due to malfunction in the field device or its peripherals.</p> <p> <b>Maintenance required:</b> Although the communication is error-free, the wear reserve is nearly exhausted or a function will soon be restricted due to operational conditions.</p> <p> <b>Off-specification:</b> The device is operating outside its specified range or internal diagnosis indicates deviations from measured or set values due to internal problems in the device or process characteristics.</p> <p> <b>Device OK:</b> Communication is error-free.</p> <p> <b>Functional Check:</b> Communication temporarily incorrect (e.g. frozen) due to on-going work on the device.</p> <p> <b>Diagnosis deactivated</b></p>

Table 7: Status Bar Icons [1]

## 2 Getting Started

### 2.1 Configuration Steps

The following table describes the steps to configure a device with the Generic DeviceNet Slave DTM as it is typical for many cases. At this time it is presupposed that the DeviceNet Master DTM installation was already done.

#	Step	Short Description	For detailed information see section	Page
1	Add DeviceNet Slave in the Device Catalog	Add the Device in the Device Catalog by importing the device description file to the Device Catalog. Depending of the FDT Container. For netDevice: - Network > Import Device Descriptions.	(See User Manual <i>netDevice and netProject</i> )	-
2	Load device catalog	Depending of the FDT Container: For netDevice: - select <b>Network &gt; Device Catalog</b> , - select button <b>Reload Catalog</b> .	(See User Manual <i>netDevice and netProject</i> )	-
3	Create new project / Open existing project	Depending of the frame application. For the configuration software: - select <b>File &gt; New or File &gt; Open</b> .	(See User Manual of the Frame Application)	-
4	Insert Controller or Device into configuration	Depending of the FDT Container: For netDevice: - in the Device Catalog click to the Controller, - and insert the device via drag and drop <b>to the line</b> in the network view, - in the Device Catalog click to the Device, - and insert the device via drag and drop <b>to the Controller bus line</b> in the network view.	(See User Manual of the Frame Application)	-
5	Configure Device	Configure the Device. - Double click to the device icon of the Device. - The Generic Device DTM configuration dialog is displayed. In the Generic Device DTM configuration dialog: - select <b>Configuration &gt; General</b> , - set UCMM and Fragmentation Timeout, - select <b>Configuration &gt; Connection</b> , - configure the device connection, - select <b>Configuration &gt; Parameter</b> , - set the parameter data of the device, - close the Generic Device DTM configuration dialog via the button <b>OK</b> .	<i>Configuring Device Parameters</i>  <i>General Settings</i>  <i>Connection Configuration</i>  <i>Parameter</i>	18  20  21  29
6	Configuration Steps Controller device	Configure the Controller device via DeviceNet Master DTM.	(See User Manual <i>DTM for DeviceNet Master devices</i> )	-
7	Save project	Depending of the frame application. For the configuration software: - select <b>File &gt; Save</b> .	(See User Manual of the Frame Application)	-

Table 8: Getting Started - Configuration Steps



For information to further steps as **Download Configuration** or **Diagnosis**, refer to the user manual *DTM for DeviceNet Master devices*.

## 2.1.1 Configuring Device Parameters

The following steps are needed to configure the device parameters using the Generic DeviceNet Slave DTM:

1. Set UCMM and Fragmentation Timeout.
  - Select **Configuration > General** in the navigation area.
2. Configure the device connection.
  - Select **Configuration > Connection** in the navigation area.
3. Set the parameter data of the device.
  - Select **Configuration > Parameter** in the navigation area.



For more information refer to section *General Settings* on page 20, *Connection Configuration* on page 21 and *Parameter* on page 29.

# 3 Configuration

## 3.1 Overview Configuration

### Configuration Dialog Panes



**Note:** Access to the configuration panes is enabled without requirement of user rights. However for editing certain user rights are required. Further information can be found in section and *User Rights* on page 35.

The table below gives an overview for the Configuration dialog panes descriptions:

Section	Subsection	Page
Configuration	General Settings	20
	Connection Configuration	21
	Poll Connection	22
	Change of State Connection	24
	Cyclic Connection	26
	Bit-Strobe Connection	27
	Parameter	29

Table 9: Descriptions of the Configuration Dialog Panes

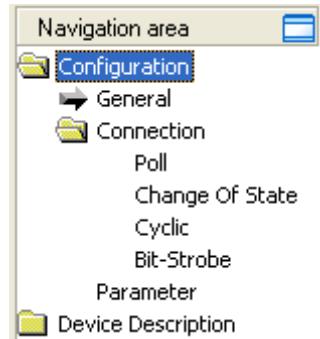


Figure 4: Navigation Area - Configuration

## 3.2 General Settings

The Dialog **General Settings** contains the following configuration possibilities:



Figure 5: General Settings - Attributes of the device identification

Parameter	Meaning	Range of Value
<b>MAC ID</b>	The <b>MAC ID</b> is assigned by the Master and can not be edited here. Changing the MAC ID has to be made with the DeviceNet Master DTM.  With each device inserted into the configuration the <b>MAC ID</b> is increased automatically by one.	0 ... 63
<b>UCMM</b>	If the field <b>UCMM</b> is selected, the device is used as UCMM-compatible device.  The option <b>UCMM</b> is used for devices which need the UCMM message format. Group 1, 2 and 3 are supported. The documentation of the used device gives information whether this option is to be used or not.	Group1, Group2, <b>Group3</b>
<b>Fragmentation Timeout</b>	<b>Fragmentation Timeout</b> (Expl. Message Timeout): If an IO data transmission or an Explicit Message is larger than 8 byte, this must be transferred fragmented in the DeviceNet (in several telegrams).  The <b>Fragmentation Timeout</b> specifies, how long the Master waits, until a Slave answers a fragmented telegram.  <b>Note:</b> Small values can lead to communication disturbances.	0 ... <b>1700</b> ... 65535

Table 10: General Settings - Attributes of the device identification



Figure 6: General Settings - Verify Device ID

The function **Verify Device ID** compares the device description in the EDS file of the device with the existing hardware, if the device characteristics of the EDS file agree with those of the hardware.

The check is made for the selected attributes in each case.

### 3.3 Connection Configuration

DeviceNet allows establishing several kinds of **Connections** between devices. In DeviceNet a device (Slave) is mapped as a collection of objects. These objects communicate via different connection types, which you can adjust under **Connection**.

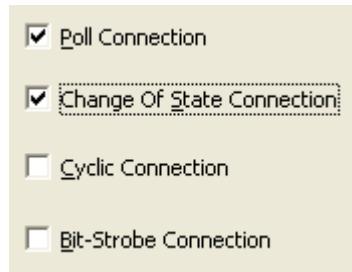


Figure 7: Configuration Dialog Connection

In the **Connection** dialog a connection type or a combination of types can be selected. Please note that a device has not to support all types of IO connections. Connection types which are not supported by the device are automatically disabled.

In the lower section of this dialog the possible combinations of the connection types are displayed:

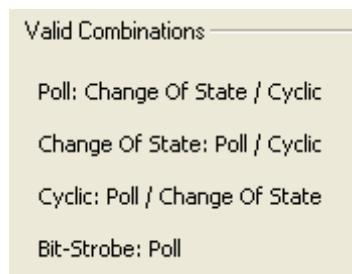


Figure 8: Indication of possible combinations of connection types

If an invalid combination is set, the following warning appears:



Figure 9: Warning invalid connection type combination

#### 3.3.1 Connection Types

The following connection types are available:

Connection Type	Page
Poll Connection	22
Change of State Connection	24
Cyclic Connection	26
Bit-Strobe Connection	27

Table 11: Possible connection types

### 3.3.1.1 Poll Connection

If the **Poll Connection** type was activated, the elements of this connection type are editable. Otherwise this dialog is disabled.

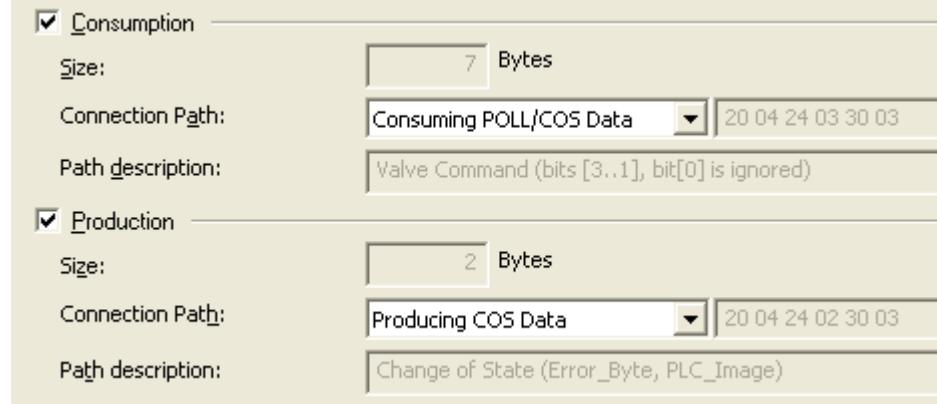


Figure 10: Poll Connection - Consumption and Production

One poll command from the Master sends a number of output data in the poll command to the device. The device receives (consumes) the output data. If it has input data configured for this poll connection it reacts by sending (producing) back the number of input data to the Master. Before a polled I/O connection is initiated by the Master, it reads the consumed and produced connection size of the data from the device (Slave) first and compares this values with the values configured in Master. If different values are detected, the connection cannot be established. A poll command can be sent from the Master to a device. The device has to respond if it has received the poll command of the Master, even if it has no input data. Else the Master will report a timeout error. Polling data to many devices has the disadvantage that the network traffic rate is very high and most data which is transferred has not changed since the last transmission. Furthermore the higher the bus load more communication errors can occur if the bus is disturbed by external influences.



Figure 11: Poll Connection – Timing

The **Production Inhibit Time**, one for each connection, configures the minimum delay time between new data production in multiples of a millisecond. The timer is reloaded each time new data production through the established connection occurs. While the timer is running the device suppresses new data production until the timer has expired. This method prevents that the device is overloaded with too fast incoming requests.

The value 0 defines no **Production Inhibit Time** and data production can and will be done as fast as possible. If in polled mode for example a Production Inhibit Time of 1000 ms is configured, then the poll request message to the device will be sent every second.

The **Expected Packet Rate**, one for each connection, is always transferred to the device before starting and doing the I/O transfer. The fourfold value is used by the device later to reload its 'Watchdog Timer'. If no data production of the remote station takes place within this time, so the connection changes into a watchdog timeout error. Incoming data productions of the remote station load the Watchdog Time again to the fourfold value of the **Expected Packet Rate**.



**Note:** the **Production Inhibit Time** is verified against the **Expected Packet Rate**. If the **Expected Packet Rate** value is unequal to zero, but less than the **Production Inhibit Time** value, then an error message is displayed by the application.

A description about the pull-down menu **Watchdog Timeout Action** you find in section *Watchdog Timeout Action* on page 28.

### 3.3.1.2 Change of State Connection

If the **Change of State Connection** type was activated, the elements of this connection type are editable. Otherwise this dialog is disabled.

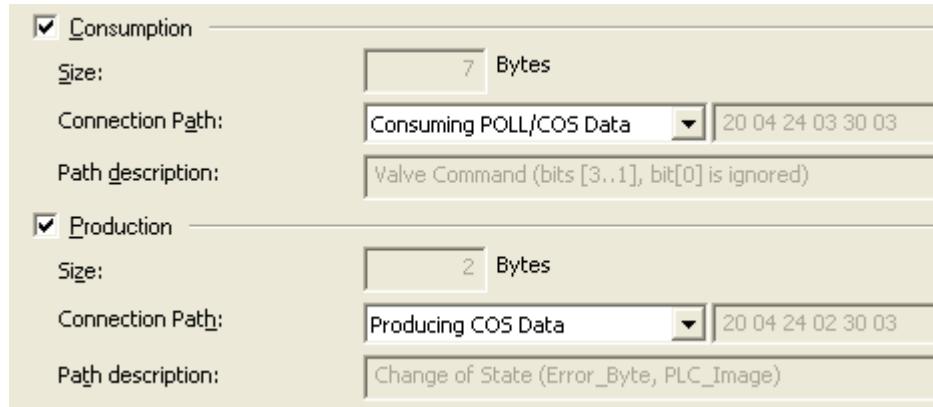


Figure 12: Change of State Connection - Consumption and Production

With this type of connection both Master and Slave send the configured amount of data (max. 255 Byte) to the respective remote station. This data production is started at change in value (trigger). If the data production does not take place during a defined time interval, the devices trigger the data production automatically to load the Watchdog Timer of the connection again. Depending on how the device behavior is configured, they can send back a confirmation message which contains any quantity of data and/or status information. Before a **Change of State** connection is initialized by the Master, it reads out the consumed and produced connection size of the data from the device (Slave) and compares this values with the values configured in the Master during configuration. If different values are determined, the connection can not build up. Data production only over 'Change of State' keeps the bus load as low as possible, while data than can be transmitted as fast as possible by each device because bus conflicts are less possible. So you can get high performance data transmission with in comparison low baud rates.



Figure 13: Change of State Connection – Timing

The **Production Inhibit Time**, one for each connection, configures the minimum delay time between new data production in multiples of a millisecond. The timer is reloaded each time new data production through the established connection occurs. While the timer is running the device suppresses new data production until the timer has expired. This method prevents that the device is overloaded with too fast incoming requests.

The value 0 defines no **Production Inhibit Time** and data production can and will be done as fast as possible.

The **Expected Packet Rate**, one for each connection, is always transferred to the device before starting and doing the I/O transfer. The value is used by the device to reload its 'Transmission Trigger' and 'Watchdog Timer'. In **Change of State** connections the fourfold value of the **Expected Packet Rate** is used to build the 'Watchdog Timer'. If no data production of the remote station takes place within this time, so the connection changes into a watchdog timeout error. Incoming data productions of the remote station load the Watchdog Time again to the fourfold value of the **Expected Packet Rate**.

If a data production did not take place since starting the 'Transmission Trigger Timer' as single values of the **Expected Packet Rate**, so the device triggers a data production at the latest then automatically.



**Note:** the **Production Inhibit Time** is verified against the **Expected Packet Rate**. If the **Expected Packet Rate** value is unequal to zero, but less than the **Production Inhibit Time** value, then an error message is displayed by the application.

A description about the pull-down menu **Watchdog Timeout Action** you find in section *Watchdog Timeout Action* on page 28.

### 3.3.1.3 Cyclic Connection

If the **Cyclic Connection** type was activated, the elements of this connection type are editable. Otherwise this dialog is disabled.

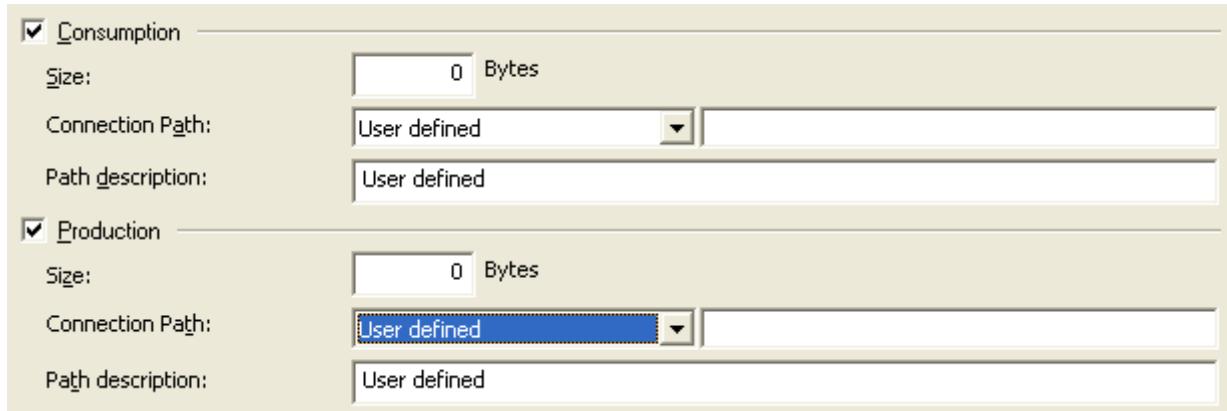


Figure 14: Cyclic Connection - Consumption and Production

At this transmission type a data production takes place automatically, if the 'Transmission Trigger Timer' has expired as single value of the **Expected Packet Rate**.



Figure 15: Cyclic Connection - Timing

The **Expected Packet Rate**, one for each connection, is always transferred to the device before starting and doing the I/O transfer. The value is used by the device to reload its 'Transmission Trigger' and 'Watchdog Timer'. In **Cyclic** connections the fourfold value of the **Expected Packet Rate** is used to reload the 'Transmission Trigger Timer' and the 'Watchdog Timer'. If no data production of the remote station takes place within this time, so the connection changes into a watchdog timeout error. Incoming data productions of the remote station load the Watchdog Time again to the fourfold value of the **Expected Packet Rate**.

A description about the pull-down menu **Watchdog Timeout Action** you find in section *Watchdog Timeout Action* on page 28.

### 3.3.1.4 Bit-Strobe Connection

If the **Bit-Strobe Connection** type was activated, the elements of this connection type are editable. Otherwise this dialog is disabled.

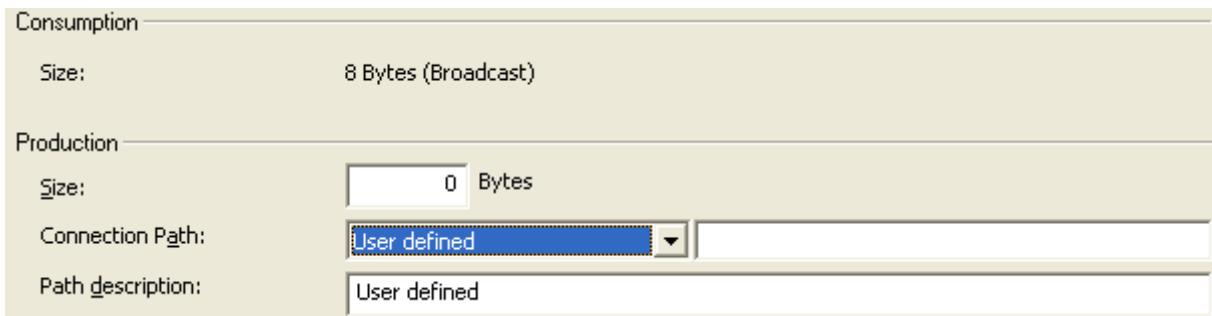


Figure 16: Bit-Strobe Connection - Consumption and Production

Bit strobe command and response messages rapidly move small amounts of output data between the Master device and one/some/all Slave devices. The bit strobe message contains a bit string of 64 bits of output data, one output bit per possible device. Each bit in there is assigned to one device address (MAC-ID) in the network. Herewith this service has broadcast functionality that means more than one Slave device can be addressed by one command. Because all addressed Slave devices get this command at the same time, this command is normally used to synchronize data transfer to several Slave devices. A Slave device can take its corresponding output bit as a real output information to give it to the peripheral connections (e.g. an LED) and/or use the bit as a trigger to send back its input data with a poll response message. The data that can be sent back from each Slave after a bit strobe command was received is limited to 8 bytes in length. Bit strobe usage causes therefore a reduced bus loading than poll connections.



Figure 17: Bit-Strobe Connection - Timing

The **Expected Packet Rate**, one for each connection, is always transferred to the device before starting and doing the I/O transfer. The fourfold value is used by the device later to reload its 'Watchdog Timer'. If no data production of the remote station takes place within this time, so the connection changes into a watchdog timeout error. Incoming data productions of the remote station load the Watchdog Time again to the fourfold value of the **Expected Packet Rate**.

A description about the pull-down menu **Watchdog Timeout Action** you find in section *Watchdog Timeout Action* on page 28.

### 3.3.2 Watchdog Timeout Action

The **Watchdog Timeout Action** defines the device behavior when the watchdog timer in the device (Slave) expires. The following actions are adjustable:

- **Timeout:** The connection transitions to the timeout state and remains in this state until it is Reset or Deleted.
- **Auto delete:** The connection class automatically deletes the connection if it experiences an Inactivity/Watchdog timeout.
- **Auto reset:** The connection remains in the established state and immediately restarts the Inactivity/Watchdog timer.

## 3.4 Parameter

In the **Parameter** dialog the parameter data of the device can be edited.

If default parameters are configured in the EDS file for this device, these are inserted automatically. Some of devices need further parameterization data, to change for example a measurement limitation or a value range. These data are device specific and their functionality can not be explained at this point. The explanation can be found in the corresponding device manual.

Parameter Configuration											
Parameter Group: ALL						Display Mode: Decimal					
Acti...	Class	Inst...	Att...	Type	Acc...	Param. Name	Value	Min.	Max.	Description	
15	3	1	BYTE	2	Valve Command	RESERVED	0	15	Assembly Object - A		
15	5	1	WORD	2	Alarm/Travel Timer 1	Alarm Coil 1 > ON	0	65535	Assembly Object - A		
15	8	1	BYTE	2	Setup Command	RESERVED	0	255	Application Object -		
15	10	1	WORD	2	Alarm #1 Setup	CLOSED	0	65535	Application Object -		
15	11	1	WORD	2	Alarm #2 Setup	CLOSED	0	65535	Application Object -		
15	12	1	WORD	2	Alarm #3 Setup	CLOSED	0	65535	Application Object -		
15	13	1	WORD	2	Alarm #4 Setup	CLOSED	0	65535	Application Object -		
15	14	1	WORD	2	Alarm #5 Setup	CLOSED	0	65535	Application Object -		
15	15	1	WORD	2	Alarm #6 Setup	CLOSED	0	65535	Application Object -		

Figure 18: Parameter Configuration

Parameter	Value	Description
Parameter Group	<u>ALL</u> USER DEFINED xxx	All parameter groups defined in the EDS file are merged in one table.  A parameter group defined by the user is displayed.  In the EDS file of the device further parameter groups can be defined, which are also displayed in the pull-down menu Parameter Group. The name of this parameter group itself is also defined in the EDS file.
Display Mode	<u>Decimal</u> Hexadecimal	The values <b>Min</b> and <b>Max</b> in the table are indicated in decimal notation by default. By selecting the <b>Display Mode</b> Hexadecimal the values are shown in hexadecimal notation.

Table 12: Change Parameter Data

By using a data set the respective parameter value for the Master configuration are approved and transferred to the Slave by the Master during the initialization phase.

A description of the individual parameters, indicated by **Class**, **Instance** and **Attribute**, can be referred in the device description of the manufacturer.

If “**User Defined**” is selected in **Parameter Group**, the entries in the columns **Param. Name** and **Value** are editable. Otherwise the entries are fixed and can not be changed.

## 4 Device Description

### 4.1 Overview Device Description

#### Descriptions of “Device Description”

The table below gives an overview for the **Device Description** dialog panes descriptions:

Section	Subsection	Page
<i>Device Description</i>	<i>Device Info</i>	31
	<i>EDS Viewer</i>	31

Table 13: Descriptions of the Dialog Panes Device Description

#### Device Description Dialog Panes

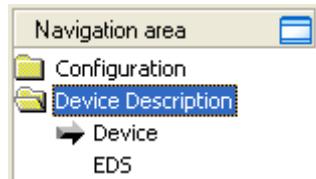


Figure 19: Navigation Area - Device Description

## 4.2 Device Info

The **Device Info** dialog contains manufacturer information about the device, which is defined in the EDS file. The following information is indicated:

Parameter	Meaning
Vendor name	Vendor name of the device
Vendor ID	Identification number of the manufacturer
Product Type	Communication Adapter
Product Type String	Product Name as string
Product Code	Product code of the device
Product Name	Name of the device The variable Product Name is a text string that should represent a short description of the product/product family.
Major Revision	Major Revision
Minor Revision	Minor Revision
Catalog	Used catalog name
Icon filei	Udes icon file name

Table 14: General Device Information

## 4.3 EDS Viewer

The **EDS Viewer** shows the content of the EDS file in a text view.

Under **Filename** the file directory path and the file name of the displayed EDS file is displayed. **Find what** offers a search feature to search for text contents within the text of the EDS file.

In the EDS Viewer window on the left side, the line number is displayed for simple overview, the further entries show the EDS file in text format.

Parameter	Meaning
Filename	File directory path and the file name of the displayed EDS file.
Find what	Search feature to search for text contents within the text of the EDS file.
Match case	Search option
Match whole word	Search option

Table 15: Device Description – EDS Viewer

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## 6 Glossary

### DTM

Device Type Manager

The Device Type Manager (DTM) is a software module with graphical user interface for the configuration and/or for diagnosis of devices.

### EDS

An Electronic Data Sheet (EDS) provides information necessary to access and alter the configurable parameters of a device. An Electronic Data Sheet (EDS) is an external file that contains information about configurable attributes for the device, including object addresses of each parameter. The application objects in a device represent the destination addresses for configuration data. These addresses are encoded in the EDS.

### FDT

Field Device Tool

FDT specifies an interface, in order to be able to use DTM (Device Type Manager) in different applications of different manufacturers.

### MAC ID

The network address of a device serves to distinguish itself on a DeviceNet fieldbus system from any other device or Slave on this network. This should be a unique number for each device.

## 7 Appendix

### 7.1 User Rights

User-rights are set within the FDT-container. Depending on the level the configuration is accessible by the user or read-only.

To access the **Configuration** and **Device Description** panes of the Generic DeviceNet Slave DTM you do not need special user rights.



**Note:** To edit, set or configure the parameters of the **Configuration** panes, you need user rights for *Maintenance*, for *Planning Engineer* or for *Administrator*.

The **Device Description** panes do not contain any editable elements. The indicated values in are only for information purposes.

The following tables give an overview of the user right groups and which user rights you need to configure the single parameters.

## 7.1.1 Configuration

### General Settings

	Observer	Operator	Maintenance	Planning Engineer	Administrator
General Settings	X	X	X	X	X
UCMM support	D	D	X	X	X
Fragmentation Timeout	D	D	X	X	X
Verify Device Key	X	X	X	X	X

Table 16: User Rights - General Settings (D = Displaying, X = Editing, Configuring)

### Connection

	Observer	Operator	Maintenance	Planning Engineer	Administrator
Connection Configuration	X	X	X	X	X
Poll Connection (*)	X	X	X	X	X
Change of State Connection (*)	X	X	X	X	X
Cyclic Connection (*)	X	X	X	X	X
Bit-Strobe Connection (*)	X	X	X	X	X
<b>Note (*):</b> The user rights for setting the individual elements of the selected connection type is described in the following table section:					
EDS Default Values Button	D	D	X	X	X
Length	D	D	X	X	X
Connection Path	D	D	X	X	X
Path description	D	D	X	X	X
Production Inhibit Time	D	D	X	X	X
Expected Packet Rate	D	D	X	X	X
Watchdog Timeout Action	D	D	X	X	X

Table 17: User Rights – Connection (D = Displaying, X = Editing, Configuring)

**Parameter**

	Observer	Operator	Maintenance	Planning Engineer	Administrator
Parameter	X	X	X	X	X
Parameter Group	X	X	X	X	X
Display Mode	D	D	X	X	X
Navigation buttons	X	X	X	X	X
Add/Delete buttons	D	D	X	X	X
EDS Default Values button	D	D	X	X	X

Table 18: User Rights – Parameter (D = Displaying, X = Editing, Configuring)

## 7.2 References

- [1] Device Type Manager (DTM) Style Guide, Version 1.0 ; FDT-JIG - Order No. <0001-0008-000>

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